Public Comment on Federal Communications Commission
Spectrum Policy Task Force Report

ET Docket No. 02-135

1. These comments are in response to FCC's Public Notice seeking Public Comment on the Spectrum Policy Task Force Report. My comments focus on the "Report of the Spectrum Rights and Responsibilities Working Group" (Working Group Report).

2. I am an Assistant Professor at the University of Miami. My current research focuses on the intersection of regulation and competition, with a focus on telecommunications.

3. The fundamental challenge the FCC faces is how to mediate between the "exclusive use" (or "property rights") and "commons" models within the context of significant technological uncertainty. In particular, it is currently unclear when and how new technologies such as software-defined radios and mesh networks will move beyond niche markets to become generally available. Some technologists even predict a world where "infinite bandwidth" will be the norm, but how this will be realized is also murky.

4. To the extent these technologies develop and become robust, then at best, the need to hand out "property rights" becomes outmoded. At worst, the license holders will be able to exclude these new technologies from their frequency bands, thereby creating a "bottleneck" that would squelch innovation, inflate prices, and hurt consumers.
   a. In other words, property rights could create a bottleneck in spectrum analogous to the last mile of cable and copper wire in cable and local telephone.[1] Historically, the FCC has worked hard to avoid recreating these problems in wireless. To stop now would jeopardize the competitive vitality of the wireless industry.

   b. This problem is made all the more serious given that the 45MHz spectrum cap will sunset on January 1, 2003. As a consequence, large incumbents will be able to consolidate an ever-increasing portion of valuable spectrum. Generally, when such caps have been lifted, industries have consolidated, and consumers have suffered. Airlines, banks, and cable companies are but a few examples.

5. On the other hand, to the extent that these technologies do not develop as anticipated, or develop later than anticipated, having an unlicensed "commons" model can create a "free-for-all" environment reminiscent of the disturbing days prior to the Radio Act of 1927. In addition, the evolution of a vibrant equipment market, vital to the "commons" argument, is still undecided.

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[1] See, e.g., Reza Dibadj, Toward Meaningful Cable Competition: Getting Beyond the Monopoly Morass, *N.Y.U. Journal of Legislation and Public Policy* (forthcoming); Reza Dibadj, Competitive Debacle in Local Telephony: Is the 1996 Telecommunications Act to Blame?, *Washington University Law Quarterly* (forthcoming).

6. No one can predict how or when the landscape will evolve. It is possible, however, for the FCC to manage this uncertainty proactively and strive to achieve the "best of both worlds" via a flexible regulatory regime. The fundamental idea is to hedge regulation by using three dimensions. The first concerns how much spectrum is licensed; the second, around what is licensed; the third, around how the licensing is actually done.

7. How much spectrum is licensed vs. unlicensed:
   a. On one level, the Working Group Report suggests that the FCC use a combination of the "exclusive use" and "commons" models. A close reading, however, suggests that the "exclusive use" is somewhat favored, since (except perhaps for certain easements) unlicensed spectrum is generally emphasized for frequencies above 50 GHz, while exclusive use is favored below 5 GHz. Under current technology, bands below 5 GHz are clearly the prime spectrum, since higher frequency communications typically require point-to-point communications, which obviously preclude a variety of applications.

   b. Given the realities described in ¶ 4 above, I would encourage the FCC also to devote a significant portion of prime spectrum (e.g., within 3 MHz to 3 GHz) to unlicensed use, without placing the power restrictions inherent in Part 15 of the C.F.R. This would enable experimenting with a broad variety of uses, including wireless carriage.

   c. Such an regime would have two advantages:
      i. Serve as a test or pilot exercise to determine how an unlicensed market will develop. Are the predictions of the "commons" advocates on point beyond garage door openers and baby monitors? How and when will higher power applications actually manage to avoid interference?
      ii. Offer consumers a choice: for example, in choosing wireless carriers, they will have the ability to go either for presumably less reliable and cheaper unlicensed service, or the more expensive licensed service. A loose analogy may be drawn to the choice better cheaper, lower quality internet telephony, and more expensive traditional circuit switched telephony. To the extent that such markets do not develop in the unlicensed space, then "commons" advocates will need to reassess their position.

8. What should be licensed:
   a. Several commentators point to the fact that licensees should have rights to portions of the spectrum in fee simple.
      i. First, this is problematic given Section 301 of the Communications Act which prohibits "ownership" the airwaves.

      ii. Second, over the long run, this could be disastrous given the "bottleneck" danger discussed in ¶ 4 above. In other words,

incumbent licensees could hold up innovation simply by refusing to put spectrum to better use. The traditional privatization argument, that bargaining will put the resources to their most efficient use, ignores substantial transaction and enforcement costs inherent in buying and selling portions of the spectrum. Note that these issues are raised the seminal works of Coase and DeVany, but are typically glossed over in conventional analyses.

iii. An additional concern is that companies may not behave rationally in their quest to build closed, integrated telecommunications empires. These networks quickly become obsolete, and hinder innovation. (The cable industry, where both consumers and cable shareholders have suffered mightily, is a case in point.)

b. As a consequence, the FCC should set a number of restrictions on the licenses, including:

i. Temporal limitations – for example, the license would be good only for a certain number of years, then would have to be re-obtained. The usual argument against this is that firms need certainty, else they will not invest. But firms in all industries, even heavily capital intensive ones, deal with uncertainty every day. The fact that telecommunications firms somehow deserve special treatment appears to be a red herring and would need to be shown empirically. Note also that such limitations are consistent with Congress' direction under Section 304 of the Communications Act.

ii. Mandatory resell requirements – incumbents are unlikely to want to resell a portion of their capacity unless mandated by regulation. (Note for example, the experience of New Zealand, where spectrum was privatized, but secondary transactions did not materialize.) A resell requirement would ensure that the band manager idea actually does come to pass. Indeed, those who defend a pure "property rights" approach on the theory that band managers would develop should hardly be opposed to such a mandate.

9. How the licensing is done:

a. The FCC should seriously reconsider whether auctions should be the preferred means of allocating licenses. A number of commentators have already raised potential constitutional issues, the fact that government receipts are not spread out over time, and the fact that auctions costs will be subtracted from revenues to lower future tax income.

b. The biggest concern, however, is that auctions will tend to attract predominantly powerful incumbents who can bid for spectrum and create an oligopoly, which would present a huge threat to competition. (Notwithstanding the fact that the

temporal limitations and resell requirements in ¶ 8 are meant to help alleviate this.)

c. As a consequence, the FCC should seriously consider another allocative mechanism, perhaps a combination of yearly fees, or a "royalty" stream prorated to the revenues the private firm derives from the spectrum.

10. Incorporating the techniques outlined in ¶¶ 6-9 above should benefit the FCC's regulations, and by extension, all of American society.
    a. If the predictions of the "commons" advocates come to pass, the FCC has protected the public by preserving an important portion of the spectrum for unlicensed use. Moreover, the limitations on the licenses granted allow flexibility to migrate spectrum as necessary.

    b. If, however, "property rights" remains the only viable way to manage the vast majority of spectrum for the next few years, then the FCC would be ready as well. Notably, by creating a series of licensing rights that are supplanted by a robust secondary market.

11. I am currently working on an article that, among other things, examines these issues within the broader context of regulation and would be pleased to provide further information.

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Submitted by:

Reza Dibadj
Assistant Professor
University of Miami
School of Business Administration
321 Jenkins Building
Coral Gables, FL 33124

Tel: 305-284-6999
FAX: 305-284-3762